

FIG. 2 is a block diagram of the system of FIG. 1, showing the interconnections between the various components. The system is controlled by a central computer microprocessor 159, which is connected to a user interface 159(C), a display 159(D), and a software code 159(B). The microprocessor 159 is also connected to a program memory 159(A). The system includes a variety of sensors, including temperature sensors 112, 121, and 134, a CO meter 206, a CO2 meter 207, a pH sensor 111, a DO sensor 109, a nitric oxide sensor 110, and a pressure sensor 113. The system also includes a variety of actuators, including pumps (PE pump 212, process pump 106, acid pump 141, base pump 141), valves (104, 115, 116, 117, 125, 126, 127, 131, 132, 135, 137, 139, 146, 149, 153, 154, 180), heaters (123, 133), coolers (102, 108), and an auto sampler 136. The system is controlled by a temperature controller 200, a pH controller 201, a DO controller 202, and a PE controller 204. The system is connected to a network of electrical connections 158 and an analog and digital connector block interface 157.

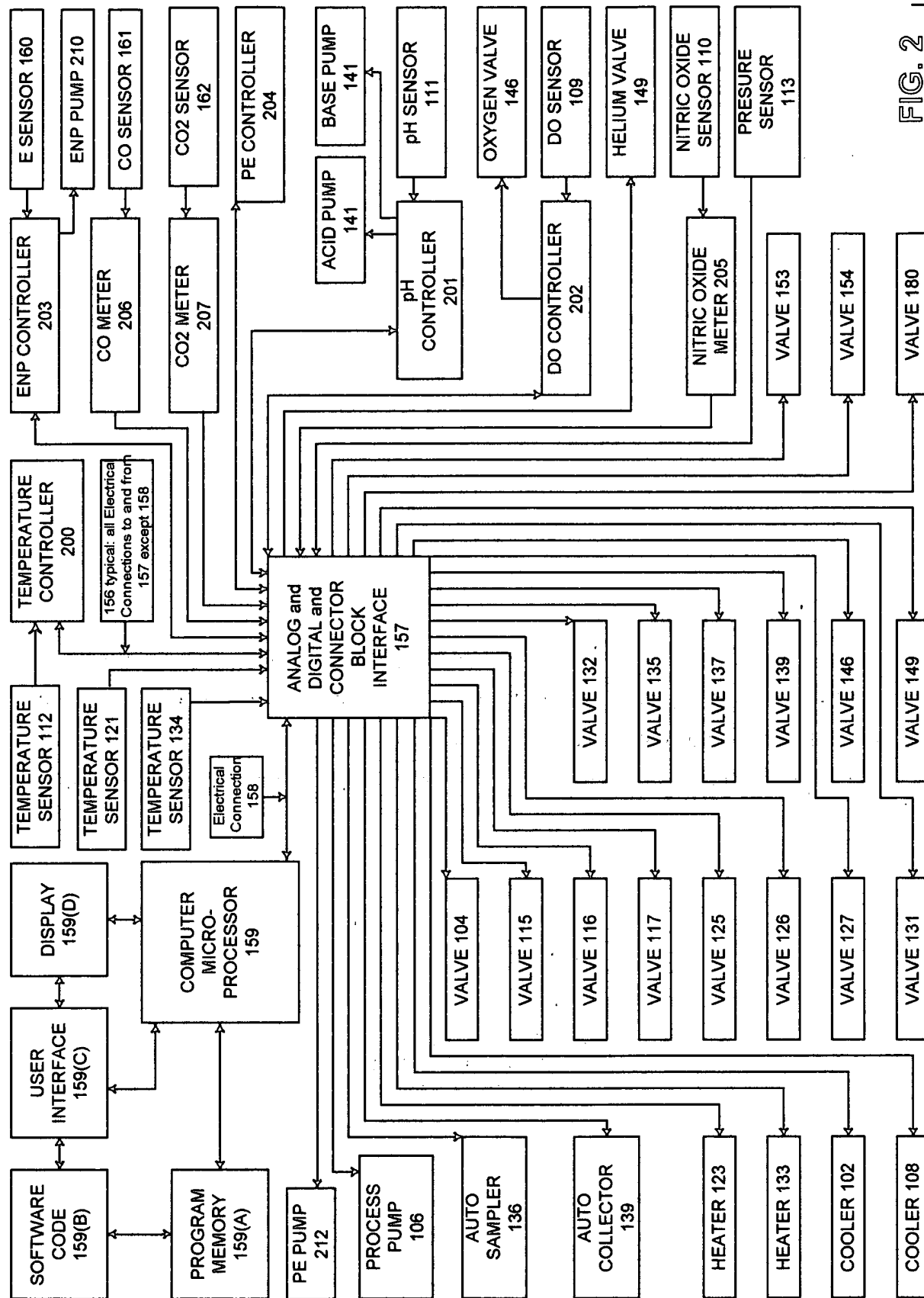


FIG. 2

FIG. 3

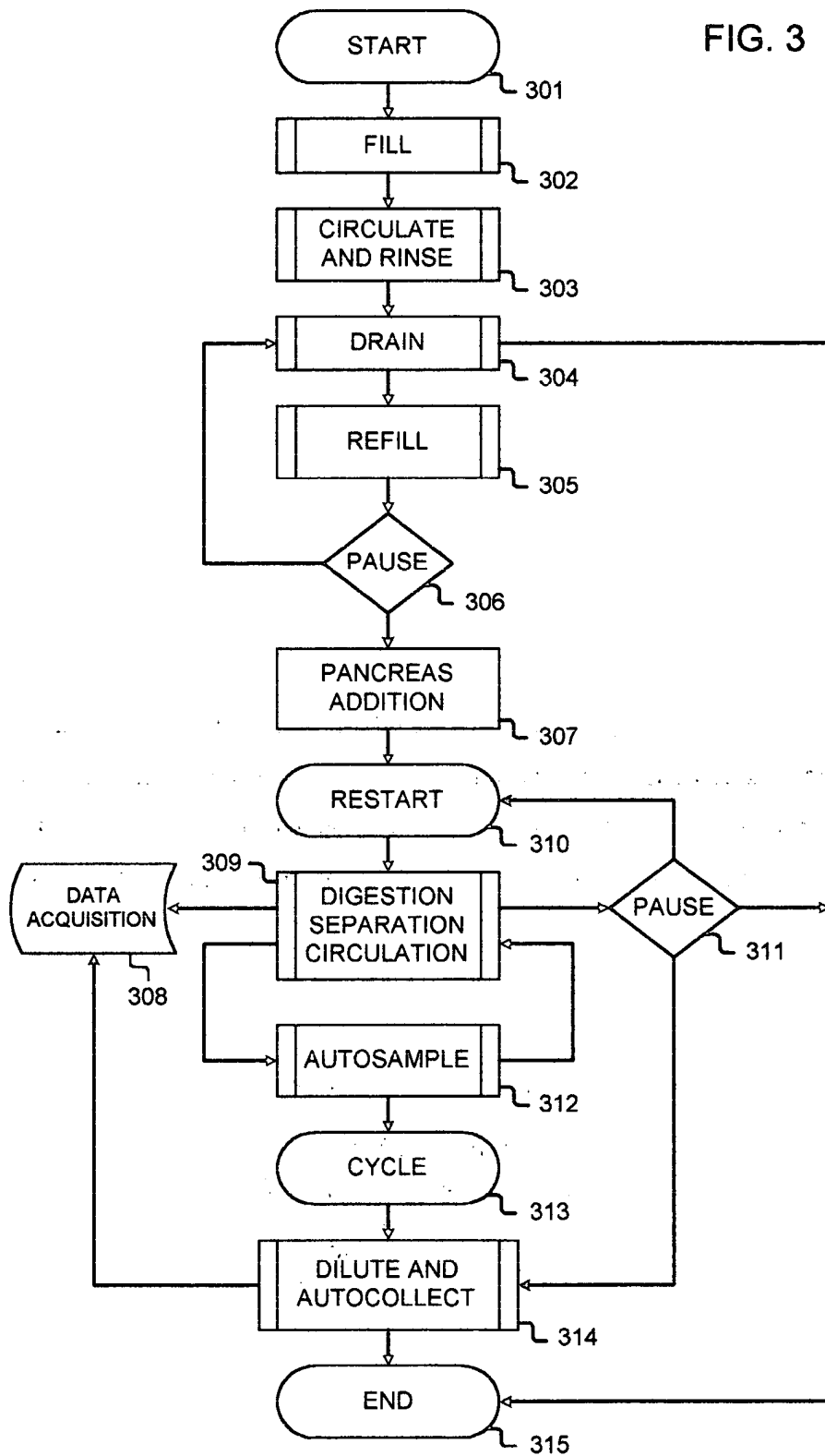


FIG. 4

AUTOMATED ISLET SEPARATION APPARATUS PROCESS CONTROL VALVE LOGIC

ACTION	401		STATE	VALVE
FILL		OPEN	104 116 126 132 139 154 180	
		CLOSED	115 117 125 127 131 135 137 153	
CIRCULATE AND RINSE		OPEN	116 126 132 139 153 180	
		CLOSED	104 115 117 125 127 131 135 137 154	
DRAIN		OPEN	104 116 126 132 137 180	
		CLOSED	115 117 125 127 131 135 139 153 154	
REFILL		OPEN	104 116 126 132 139 154 180	
		CLOSED	115 117 125 127 131 135 137 153	
PANCREAS ADDITION IN DYNAMIC FLOW DIGESTION CHAMBER		OPEN	115 125 126 132 139 153	
		CLOSED	104 116 117 180 127 131 135 137 154	
DIGESTION, SEPARATION AND CIRCULATION WITH DYNAMIC FLOW DIGESTION CHAMBER FORWARD FLOW		OPEN	116 126 132 139 153 180	
		CLOSED	104 115 117 125 127 131 135 137 154	
DIGESTION, SEPARATION AND CIRCULATION WITH DYNAMIC FLOW DIGESTION CHAMBER REVERSE FLOW		OPEN	115 117 125 127 132 139 153 180	
		CLOSED	104 116 126 131 135 137 154	
AUTOSAMPLE AND CIRCULATE		OPEN	116 126 132 135 139 153 180	
		CLOSED	104 116 118 126 128 132 137 154	
DILUTE AND COLLECT		OPEN	104 116 126 131 180	
		CLOSED	115 117 125 127 132 135 137 139 153 154	
OXYGEN SPARGING ON OXYGEN SPARGING OFF		OPEN	146	
		CLOSED	146	
HELIUM SPARGING ON HELIUM SPARGING OFF		OPEN	149	
		CLOSED	149	

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FIG. 5 is a schematic diagram of a system 100 for processing a material 107. The system 100 includes a pump 119, a motor 120, a shaft 122, a rotor 125, a stator 126, a housing 127, and a discharge line 128. The material 107 is drawn into the pump 119 through a suction line 115 and a valve 116. The pump 119 is driven by the motor 120, which is connected to the shaft 122. The shaft 122 is connected to the rotor 125, which is positioned within the stator 126. The rotor 125 is driven by the motor 120, causing the material 107 to be pumped through the stator 126 and out of the housing 127 through the discharge line 128. The rotor 125 is also connected to a drive shaft 180, which is connected to a drive motor 127. The drive motor 127 is connected to the drive shaft 180, which is connected to the rotor 125. The drive motor 127 is also connected to the drive shaft 180, which is connected to the rotor 125. The drive motor 127 is also connected to the drive shaft 180, which is connected to the rotor 125.

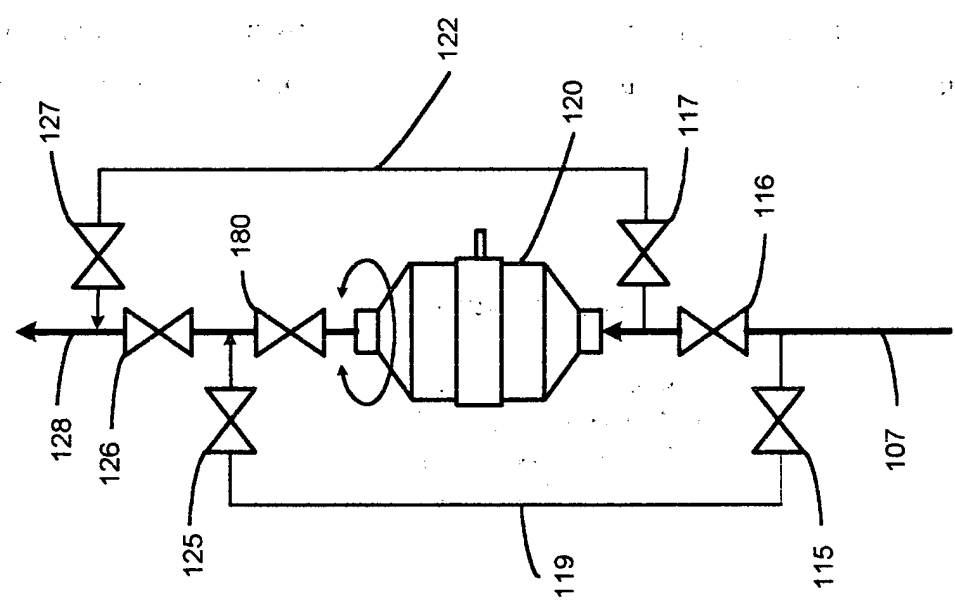


FIG. 5

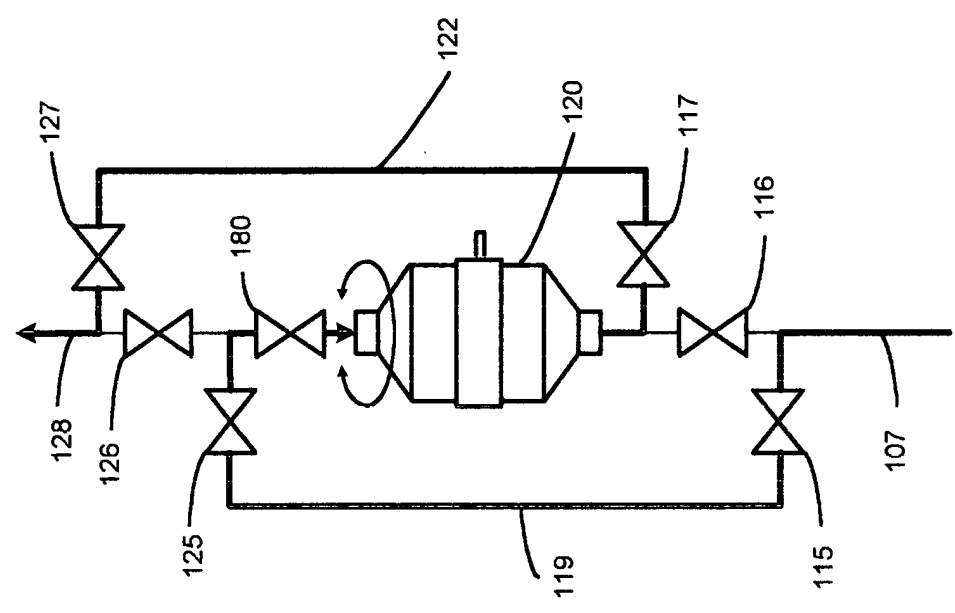


FIG. 6

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